Digital competences in secondary school teachers: Proficiency levels and training needs

Competencias digitales en docentes de educación secundaria: Niveles de dominio y necesidades formativas

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	ABSTRACT
Keywords: Digital Competence Teaching CDD, levels of proficiency, training needs	Introduction: Nowadays, the incorporation of technology in the educational field has revolutionized teaching, demanding that teachers develop digital skills. These skills go beyond the simple use of technological tools, since they require their effective implementation in teaching processes to promote student participation. Precisely, this article aims to analyze the digital competencies of secondary education teachers, covering levels of proficiency and training needs. Methodology: This is cross-sectional descriptive research, with a qualitative approach. It is based on the application of the Digital Teaching Competencies (CDD) instrument, designed and validated by Tourón and collaborators. Created under the profile of active methodologies. The participants were 62 teachers from a public school. The sample 34 teachers. Sample inclusion criterion, teachers who work directly in the classroom. Results: The analysis reveals that the surveyed teachers show a high level of knowledge in digital skills, but their practical application is lower, according to the classification of Tourón et al. Discussion: It is recommended to offer specific training programs to improve the advanced use of technological tools and their pedagogical integration, in order to raise the quality of teaching in digital environments.
	RESUMEN
Palabras clave: Competencia Digital Docente CDD, niveles de dominio, necesidades formativas	Introducción: En la actualidad la incorporación de la tecnología en el ámbito educativo ha revolucionado la enseñanza, demandando que los docentes desarrollen habilidades digitales. Estas habilidades van más allá del simple uso de herramientas tecnológicas, ya que requieren su implementación efectiva en los procesos de enseñanza para promover una participación por parte de los estudiantes. Precisamente, este artículo tiene la finalidad de analizar las competencias digitales en los docentes de educación secundaria, abarcando niveles de dominio y necesidades de formación. Metodología: Es una investigación descriptiva transversal, con enfoque cualitativo. Se parte de la aplicación del instrumento Competencias Digitales Docentes (CDD), diseñado y

validado por Tourón y colaboradores. Creado bajo el perfil de metodologías activas. Los participantes 62 docentes de un centro educativo público. La muestra 34 docentes. Criterio de inclusión muestral, docentes que trabajan directo en aula. Resultados: El análisis revela que los docentes encuestados muestran un alto nivel de conocimiento en competencias digitales, pero su aplicación práctica es inferior, según la clasificación de Tourón y colaboradores. Discusión: Se recomienda ofrecer programas de formación específicos para mejorar el uso avanzado de herramientas tecnológicas y su integración pedagógica, con el fin de elevar la calidad de la enseñanza en entornos digitales.

Introduction

In the 21st century, the integration of technology in education has significantly transformed teaching, requiring teachers to acquire digital skills. These competencies not only imply the use of technological tools, but also their effective integration in the educational processes, encouraging the active participation of students (Cabero Almenara & Palacios Rodríguez, 2020).

The article discusses the importance of digital competencies, their structure, levels of mastery and the need for continuous training among teachers. In addition, it analyzes how Information and Communication Technologies (ICT) are essential in education, highlighting policies of the Ministry of Education of the Dominican Republic that promote their use in the classroom.

Digital teaching competence is related to the use of ICT to improve teaching, adapting to the needs of students (Digital Competence Framework for Educators (DigCompEdu), 2020).

Several studies highlight the growing interest in Digital Teaching Competence (DTC), particularly in Spain and Mexico, with a notable increase in the number of studies in recent years. Collaboration among authors is significant, although its impact and dissemination varies. Most studies focus on the development of teachers' digital skills and the use of technological tools to improve teaching. The pandemic of COVID-19 has accelerated the need to strengthen the CDD due to the rise of online learning (Sánchez-Castellanos et al., 2024; Granados Maguiño et al., 2020).

It is important to highlight that Digital Teaching Competence improves learning, increasing academic performance, knowledge retention and student motivation. Examples include the use of online learning platforms, interactive applications and digital communication tools to foster collaboration between students and teachers (Cabero Almenara & Palacios Rodríguez, 2020; Carvalho et al., 2019; *Digital Competence Framework for Educators (DigCompEdu)*, 2020; Jiménez-Hernández et al., 2021; Larrea, 2021; Lores Gómez et al., 2019; Martínez et al., 2023; V. A. Pérez & Velasquez, 2024; Rodríguez-Jiménez et al., 2022).

Digital Competence in Education (DCE) refers to the pedagogical use of ICT in an educational context. It involves several aspects, among them: a) technological knowledge, which implies understanding and updating educational tools and platforms; b) technical skills, necessary to operate and solve problems in digital environments and to create multimedia content; c) digital pedagogical competence, focused on integrating technology in a way that is aligned with educational objectives; d) digital communication competence, which facilitates effective online interaction and collaboration between teachers and students.(Cabero Almenara & Palacios Rodríguez, 2020; Christine Redecker, 2020; *Digital Competence Framework for Educators (DigCompEdu)*, 2020; J. A. V. Pérez & Ortíz, 2020; Tourón, 2018; UNESCO, 2022).

Also, recent studies show that while some secondary school teachers perceive themselves as having a high level of digital competence, others require additional training, especially in methodological aspects (Pérez and Ortíz, 2020 ;Arévalo Chávez et al., 2020; Verdú-Pina et al., 2024).

This article also explores the benefits and challenges of ICT integration in the classroom, highlighting the need to bridge the digital divide and provide ongoing training so that teachers can use technology effectively.

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The key questions of the study focus on identifying the current digital competencies of teachers, their levels of mastery and training needs in a secondary school in San Francisco de Macorís, Dominican Republic.

Levels of proficiency, the United Nations Educational, Scientific and Cultural Organization defines the following levels. Basic: elementary use of technology for simple classroom tasks. Intermediate: integration of digital resources to support learning. Advanced: solid and adapted use of technologies, fostering creativity and interaction. Innovative: pedagogical transformation through the innovative use of technology (UNESCO, 2018).

Training Needs: gaps in knowledge, skills or competencies that need to be addressed to improve educational or professional performance (UNESCO, 2018).

Digital Teaching Competence CDD: is the relation of the use of ICT from a pedagogical didactic perspective in an educational context (Cabero Almenara & Palacios Rodríguez, 2020).

In the current educational context, digital competencies have become essential for the effective performance of teachers. Teaching methodologies require an increasing integration of digital tools to enhance the educational experience   (Cabero Almenara & Palacios Rodríguez, 2020, 2020; Christine Redecker, 2020; INTEF, 2017; Tourón, 2018).

The Ministry of Education of the Dominican Republic has incorporated ICTs as key tools for learning and has established policies for the development of scientific and technological competencies in education. These policies focus on two main components: first, the exposure of natural and social scientific manifestations; and second, the application, communication and understanding of scientific and technological approaches, models, principles, laws, theories and theories (MINERD, 2023).

However, many teachers lack the necessary skills to effectively use these tools in their pedagogical practice (González, 2023; J. A. V. Pérez & Ortíz, 2020; Rodríguez-Jiménez et al., 2022).

This study aims to analyze the digital competencies of secondary school teachers, identifying their levels of mastery and the areas in which they need training. The results of this study will allow a better understanding of the training needs in digital competence and will help to design more appropriate training programs.

Method

Methodology

This study used a descriptive and analytical research methodology with a qualitative approach. The objective was to analyze the digital competencies of teachers at a secondary school in Educational District 07/05, San Francisco de Macorís, Dominican Republic, in order to identify their levels of mastery and training needs.

The main instrument was a questionnaire previously validated by Tourón and collaborators, based on a scale of values that quantifies the variables associated with digital competencies (Tourón et al., 2018)based on a scale of values that quantifies the variables associated with digital competencies.

The research design was descriptive cross-sectional, which made it possible to analyze the level of competencies and the training needs of teachers at a single point in time. (Hernández Sampieri et al., 2014).

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The procedure followed an inductive-deductive approach, starting with the collection of specific data and then generalizing conclusions based on established digital competence models, such as the European Framework for Digital Competence in Education (DigCompEdu) (Cabero Almenara & Palacios Rodríguez, 2020; Tourón et al., 2018; UNESCO, 2018, 2022).

Route and Procedures

1. Initial Visit: A courtesy visit was made to the Liceo Ercilia Pepín to socialize with the directors and deliver the letter of district approval to carry out the data collection.
2. Presentation of the Project: The research project was presented to the Educational Center and focus groups were formed with teachers to explore their digital competencies.
3. In-depth interviews: In-depth interviews were conducted with teachers to obtain detailed information about their level of digital competencies.
4. Online Panel: An online panel was created with direct access to the digital competencies questionnaire (CDD), generating a specific link for the group.
5. Application of the Questionnaire: The validated questionnaire of Tourón et al. (2018) to teachers through the online platform.
6. Data analysis: The data collected were analyzed and tabulated, contrasting the results with the referential framework of teachers' digital competencies.
7. Presentation of Results: Finally, the findings were presented and analyzed based on the pre-established models of digital competencies.

Participants

The study included a population of 62 teachers, 34 of whom were selected for the final sample under the criterion of working directly in the classroom. The remaining 28 teachers, who performed other academic functions, were excluded from the study. No specific profiles were established for the selected teachers.

Instrument

We used the questionnaire validated by Tourón et al. (2018), which consists of 54 questions designed to measure the knowledge and use of digital tools in the teaching environment. Each item is evaluated on a scale of 1 to 7, where 1 represents the lowest degree of knowledge or use and 7 the highest. It also includes a "not applicable" option in case the teacher is unable to answer a question.

The questionnaire classifies the competence level of teachers according to the European Framework for Digital Competence in Teaching (DigCompEdu) (Cabero Almenara & Palacios Rodríguez, 2020; INTEF, 2017; Tourón et al., 2018) with the following categories: Novice (A1), Explorer (A2), Integrator (B1), Expert (B2), Leader (C1) and Pioneer (C2). The reliability of the instrument was measured with a Cronbach's Alpha of 0.98 (Tourón et al., 2018)which guarantees its internal consistency.

Results

The following are the demographic results of the participants whose total number of participants was 34 teachers where 68% are female and 32% are male. As

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for the age of the respondents, the results indicate that 18% are in the 21 to 30 years old range, while 41% are between 31 and 40 years old. In addition, 21% of the participants are between 41 and 50 years old, 18% are between 51 and 60 years old, and 3% did not provide this information.

Regarding teaching experience, 41% of respondents have 1 to 5 years of experience, while 21% have 6 to 10 years and another 21% have between 11 and 15 years. Six percent of the participants have worked between 16 and 20 years, 9 percent have more than 20 years of teaching experience and 3 percent did not answer this question. Finally, with regard to academic qualifications, 68% of the respondents have a bachelor's degree, 24% have a master's degree and 9% have obtained a doctorate.

The results of the questionnaire applied show competency levels of C1 in knowledge and B2 in usefulness as shown in Table 1.

TABLE 1
Table and text model

Areas of Digital Competencies	Meet Competency Level	*%	Use Competency Level	*%
Information and Information Literacy	C1	74	B2	67
Communication and Collaboration	C1	79	B2	70
Digital Content Creation	C1	72	B2	61
Security	C1	75	B2	65
Troubleshooting	C1	76	B2	67

Note. Results of the questionnaire applied (Cabero-Almenara & Palacios-Rodríguez, 2020; INTEF, 2017; Tourón et al., 2018) A1=Novice; A2=Explorer; B1=Integrator; B2=Expert; C1=Leader; C2=Pioneer.
**Percentages (%) indicate group average by skill level.

Information and Information Literacy

The Information and Information Literacy area covers the critical evaluation of information, data and digital content, as well as the management and storage of these to facilitate their retrieval and organization. According to Table 1, in this area, 74% of the teachers demonstrate a knowledge level of Leader (C1), while 67% use these competencies reaching the level of Expert (B2).

Communication and Collaboration

The Communication and Collaboration area includes sharing information and content, acting as an intermediary and disseminating news and resources with proper citation practices, as well as promoting online citizen participation and technological empowerment. Table 1 shows that 79% of teachers have a knowledge level of Leader (C1), and 70% reach the level of Expert (B2) in the use of these competencies.

Digital Content Creation

In the area of digital content creation, teachers are able to integrate and rework existing resources to generate original and relevant content, understanding applicable

copyrights and licenses. In terms of programming, they demonstrate knowledge of the basic principles for modifying programs and applications. In this area, 72% of teachers have a knowledge level of Leader (C1) and 61% reach the level of Expert (B2) in the use of these competencies, according to Table 1.

Security

In the area of security, teachers are aware of the importance of protecting personal data and digital identity, respecting privacy and protecting themselves against threats such as fraud and cyberbullying. In addition, they recognize the need to avoid physical and psychological health risks related to the use of technology and take into account the environmental impact of technology use. According to Table 1 in this area, 75% have a knowledge level of Leader (C1), while 65% reach an Expert level (B2).

Troubleshooting

In the area of problem solving, teachers. They are able to identify technological needs and answers, innovate and use digital tools in a creative way, participating in collaborative productions and generating knowledge to solve conceptual problems. In this area, 76% have a knowledge level of Leader (C1) and 67% reach the Expert level (B2), as shown in Table 1.

FIGURE 1

Levels and classification obtained by area
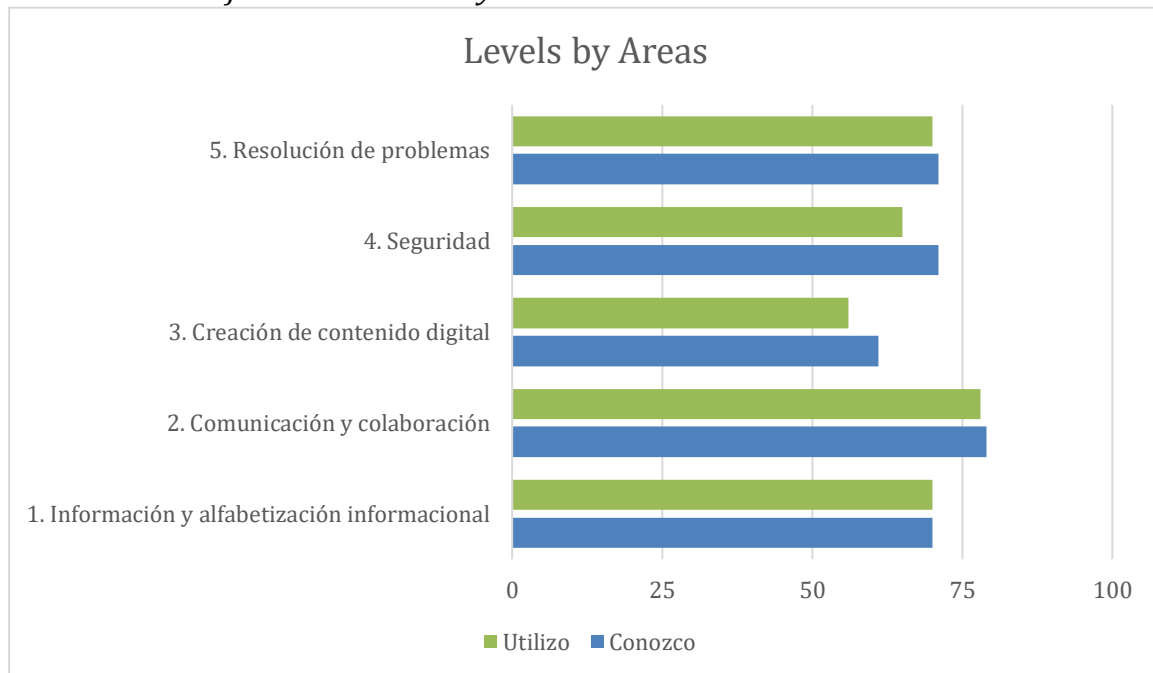
Note. Numerical rank at each level of mastery to evaluate the progress of the group. (Basic: 0 - 25 points, Intermediate: 26 - 50 points, Advanced: 51 - 75 points, Innovative: 76 - 100 points) Mastery levels: Basic: Elementary use of technology for simple classroom tasks. Intermediate: Integration of digital resources to support learning. Advanced: Robust and adapted use of technologies, fostering creativity and interaction. Innovative: Pedagogical transformation through the innovative use of technology (UNESCO, 2018).

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Discussion and Conclusions

Digital teaching competence is essential to train teachers capable of promoting learning focused on talent development, moving away from the traditional approach of knowledge transmission. Today's educational demands require methods adapted to the learning styles of students, who must be prepared for a globalized and digitalized society. To do so, learning must effectively integrate pedagogy, content and technology. The results presented in this report reflect the digital competence level of the surveyed teachers and how they can improve in their educational practice and professional training, as supported by the theories cited in this article.

Regarding the results of the statistical information, the participants reflect a female majority in the sample. Teachers predominate in the middle age group, with a distribution that suggests a significant representation of professionals in the middle stage of their career. In terms of experience, the findings indicate that most of the respondents are relatively young teachers.

With regard to academic degrees, the data reflect a diverse academic profile among teachers, with a notable proportion of undergraduates and a lower percentage of postgraduates. This variation in academic background could influence their educational practices and digital competence.

Linked to the area of Information and Information Literacy, it includes the ability to navigate, search and filter information, data and digital content efficiently, expressing information needs in an organized manner, finding relevant resources for teaching tasks and managing diverse sources. The results of which, when contrasted with the study by Orosco-Fabian et al. show that these studies coincide in that teachers have a satisfactory command of digital competencies related to browsing, searching and filtering information, as well as in the use of advanced tools to find appropriate resources. Both emphasize the ability of teachers to design personalized strategies to search for and constantly update relevant information.

Also, while these achievements are positive, teachers are still in the process of developing key competencies in areas such as information literacy, communication and collaboration, and digital security. This contrasts with the first statement that suggests a greater mastery in all the competencies mentioned, highlighting a gap in certain important digital areas that still require attention in their training. As observed in Orosco-Fabian's research findings (Orosco-Fabian et al., 2021).

Findings in the area of communication and collaboration encompass interaction through digital devices and applications, proper management of digital communication and tailoring strategies to specific audiences; it also involves the use of technologies for collaborative work, adherence to online behavioral norms (netiquette), and digital identity management to protect reputation. Teachers have a Leader competency level in these dimensions.

Regarding the use of sharing information and content; motivating their colleagues and students to evaluate and disseminate educational information through digital media; online citizen participation, as active users who express opinions and participate in debates in virtual educational and social spaces; as well as the ability to develop digital citizenship projects and collaboration through digital channels, they stand out as Experts, promoting the active participation of the educational community through collaborative tools in their teaching practice.

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In the area of netiquette, teachers have a solid knowledge of the rules of conduct in digital contexts while their use is Expert, reflecting that they respect these rules and cultural diversity in digital communication. Finally, in digital identity management, they reach an Expert level, with competencies to create and manage their digital identity and data. Also, in terms of use, their level is Expert, showing awareness of the influence of personal image in social networks and striving to manage it adequately but with limitations.

In spite of what was stated above about the Expert level in terms of utilization, which involves collaborating in the creation of digital educational products and organizing collaborative activities with students, this level should be aligned with the Leader level, as reflected in previous paragraphs. Similar to these findings are the researches (Escobedo & Jiménez, 2021; J. A. V. Pérez & Ortíz, 2020, 2020; V. A. Pérez & Velasquez, 2024; Rodríguez-Jiménez et al., 2022)where many teachers do not have the skills required to use ICT tools effectively in their pedagogical practice

In the area of digital content creation, teachers demonstrate skills to develop and enhance content in various formats, including multimedia creations, expressing themselves creatively through digital media.

They are classified as Leaders, since they are able to create didactic materials in different formats and publish them in different digital spaces. In terms of use, they reach the level of Experts, producing complex digital content and encouraging this type of production among their students.

In addition, in the breakdown of the specific dimensions of that area and in the device protection area. A diverse classification was observed in the findings. First, teachers demonstrate knowledge competencies to protect their devices and digital content, understanding the risks on the network and applying appropriate security measures. They also claim to have the skills to identify and solve technical problems, from the most basic to the most complex.

Second, in terms of personal data protection and digital identity, their rating is Leaders, because they frequently adjust privacy settings to improve their online protection. In health and wellness protection, they are also classified as Leaders, as they are aware of the correct practices in the use of technology to avoid health problems and protect themselves from cyberbullying. Finally, in environmental protection, their classification is Leaders, as they implement efficient strategies for the use of devices and make decisions that respect the environment, both in the purchase and disposal of equipment.

Third, although in the area of device and digital content protection, personal data protection, health, welfare and environment, teachers are classified as Leaders and Experts in terms of knowledge, the actual use of these tools shows a different reality. In practice, many of them are classified as Novices, which indicates that, although they possess the necessary knowledge, they do not apply it consistently in their daily work. This reflects a gap between the level of theoretical competence and its practical implementation, suggesting the need for further training and support to ensure a more effective use of these competencies in digital protection and management, as stated by Tourón et al (Tourón, 2018).

Similarly, with regard to copyright and licensing, they have a good knowledge of the subject and are classified as Experts, promoting training in the respect for copyright. However, in practice, many still do not apply these licenses, which places them at the Novice level in their use. Finally, in the area of programming, their classification is Explorers, as more than half make basic modifications to educational applications to

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adapt them to learning needs related to computational thinking. This classification can be confirmed by the theoretical postulates cited in this article (Cabero-Almenara & Palacios-Rodríguez, 2020; INTEF, 2017; Tourón, 2018; Tourón et al., 2018)

In the area of technical problem solving, teachers recognize the importance of identifying gaps in their digital competence, keeping up to date and supporting others in their digital development. They are classified as Experts, since they solve simple technical problems with the help of manuals or guides. Regarding the identification of technological needs and responses, they are considered Leaders, since they keep themselves updated on technological advances and select adequate solutions to solve problems in their teaching work. In innovation and creative use of technology, they are also classified as Leaders, demonstrating the ability to innovatively apply digital technologies in their teaching. Finally, in identifying gaps in digital competencies, they are classified as Knowledge Leaders, helping colleagues to develop their digital competencies, although their use is less frequent, being classified as Experts.

In contrast to other research, where it is noted that about 98% of teachers are at a basic level of digital competence and only use ICT in an elementary way (A. Martínez, 2021), the current findings show a higher level of progress. Although teachers report significant knowledge in areas such as device protection and creative use of technology, there is a notable discrepancy between what they know and what they actually apply, especially in the creation of digital content.

This contrast underscores the need for a strategic upgrade in the technological training of teachers, as suggested in previous studies, to ensure that they progress in daily practice to more advanced levels such as Leader or Pioneer (C2) (Tourón et al., 2018).

The digital competence of teachers is fundamental in today's education, as its continuous development not only benefits educators, but also improves the quality of the teaching and learning process in the digital era. This article highlights the need to invest in this competence to ensure a quality and relevant education in the current context, as pointed out in the theoretical references (Cabero-Almenara & Palacios-Rodríguez, 2020; Tourón, 2018; UNESCO, 2022)

Despite the benefits, teachers face challenges such as the digital divide and resistance to change. According to other research, secondary education teachers tend to have an intermediate level of digital competence, with deficiencies in areas such as digital content creation, problem solving and digital security (García et al., 2022).

Future research should focus on strategies to address the challenges faced by teachers and on the continued evolution of digital competencies in response to technological advances. This coincides with other studies that highlight the need to offer more training for teachers, supported by reliable and valid competency assessment tools (Palacios-Rodríguez & Martín-Párraga, 2021).

Digital technologies eliminate geographical barriers, facilitating continuous and distance learning, and favoring work-life balance. They allow self-paced learning, adapted to diverse intelligences, and ensure access to a wide variety of high quality information and learning materials. In addition, they introduce new ways of teaching that simplify teaching and improve student satisfaction. They also accelerate evaluative processes with immediate feedback and create virtual environments that strengthen the links between teachers and students (González, 2023).

The integration of ICT tools in the classroom offers significant benefits, but also presents challenges that must be adequately addressed. It is critical to ensure that all schools have access to technology, train teachers, and establish strong security and privacy policies. Investment in ICT in education is essential for the future of the teaching

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and learning process. This study has examined the digital competencies of teachers, highlighting both their advantages and obstacles. ICTs are powerful for improving education, but their successful implementation requires a comprehensive approach that addresses the needs of digitally competent students and teachers (Christine Redecker, 2020; UNESCO, 2018).

To identify digital competencies in teachers, a clear and well-defined approach is needed, as well as the development of skills that respond to the educational objectives and needs of students. Making informed decisions about the technology that best suits these needs is crucial, aligning with established educational criteria. Collaboration with peers and expert guidance in the technology inclusion process can facilitate adaptation(Tourón et al., 2018).

Digitally competent teachers encourage group work and use ICT effectively, supporting collaboration and adaptation to technological integration. Their confidence to innovate and their ability to see change as an opportunity to grow are vital. These teachers show flexibility and are willing to learn from their own mistakes and from others. In addition, they invite others to delve deeper into the use of technological resources and propose innovative projects that address various needs, such as parent and student training.

In the same way, they implement digital projects based on active methodologies such as gamification, Flipped Classroom and project-based learning. In summary, digitally competent teachers are restless, investigative, active and proactive in technology education (Tourón, 2018; Tourón et al., 2018).

In conclusion, the results show that the teachers surveyed reach a level of "Leader" in knowledge, but only "Expert" in usefulness. This indicates that, although secondary school teachers possess strong digital competencies in terms of knowledge, their practical application is below that level, according to the classification of Digital Teaching Competence proposed by Tourón et al (Tourón et al., 2018). This evidences the need for additional training in the use of advanced tools and their pedagogical integration. It is recommended to implement specific training programs that address these gaps to improve the quality of teaching and learning in digital environments.

After applying the Digital Competence in Teaching (CDD) questionnaire by Tourón and collaborators, recommendations have been formulated to improve the development of teachers' digital competencies, identifying their level and classification according to the European Framework, since the ideal levels of mastery to support and transform teaching and learning through the use of technologies are in the advanced and innovative ranges (UNESCO, 2018). It is important to note that these suggestions are based on the profile obtained from the group under investigation, and their validity depends on the individual responses of the teachers and their variability.

One of the main recommendations is to evaluate the quality of educational resources available on the Internet, ensuring that they are accurate and aligned with the curriculum. In addition, it is suggested to investigate the provenance, reliability, authorship and licensing of the resources before using them in class. It is also essential to select appropriate communication tools, taking into account the target audience, whether students, teachers, families or school management. As stated in the theoretical postulates (Cabero-Almenara & Palacios-Rodríguez, 2020; Tourón, 2018)

Teachers are also encouraged to plan activities that allow students to experiment with different collaborative networking tools. Using social networks to communicate with students is also a viable option, as long as rules of use are established and netiquette is

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respected. It is also advisable to follow teachers or experts in online education, which will allow you to learn and share best practices (Tourón, 2018; UNESCO, 2018, 2022).

In addition, it is proposed to expand the use of administrative procedures and digital signatures in interactions with the public administration. Staying informed about cyberbullying and appropriate uses of the Internet is crucial to detecting potential problems. Encouraging discussions about netiquette and promoting related activities will help build digital awareness in the classroom.

Finally, the importance of learning how to identify and act in cases of cyberbullying among students, ensuring the privacy of information on school devices is emphasized.

Updating on new tools that facilitate the creation of interactive content and the collection of information on student progress is essential (Tourón, 2018). Complementing training on copyright, healthy habits and the environmental impact of consumables use is also a key aspect of responsible and effective educational practice.

Finally, the results of this study confirm that, although secondary education teachers possess general digital competencies at both Leader and Expert levels, they lack the advanced skills necessary to optimize the use of technology in teaching. In addition, there should be a correspondence between knowledge and use of these competencies. However, the findings show that there is no such correspondence, and the two aspects do not align as would be expected. In theory, knowledge and use should be equivalent.

These findings are consistent with previous studies that have pointed to the need for ongoing training for teachers in areas such as digital content creation and online assessment. Limitations of this study include the small sample size and the lack of diversity in the educational contexts evaluated, suggesting that future research should expand the sample and consider other institutions. Despite these limitations, the study highlights the importance of designing training programs that are better adjusted to the current needs of teachers.

Conflict of Interest
It is important to declare that there is no conflict of interest related to this research. All authors have conducted the study in an unbiased and transparent manner, with no external influences that could affect the results or conclusions presented. We are committed to maintaining academic integrity and research ethics, ensuring that findings are based solely on the evidence gathered and objective evaluation of the data.

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